

CLAIMS

1. An optical disk device comprising:

a main chassis;

5 a disk tray movable in a direction protruding from said main chassis and in the opposite direction so as to carry said optical disk in or out of said main chassis;

a turntable that rotates said optical disk carried-in by said disk tray;

10 a traverse chassis that supports said turntable, said traverse chassis being supported by said main chassis so that said traverse chassis is swingable between a holding position in which said turntable is able to hold said optical disk and a retracting position retracting
15 from said holding position;

an optical pickup that performs recording or reproducing of a signal on said optical disk rotated by said turntable;

a common motor that generates a driving force for
20 feeding said optical pickup, for swinging said traverse chassis, and for moving said disk tray;

a first gear that rotates by a driving force of said motor;

a second gear that rotates by transmission of
25 rotation from said first gear;

a rack portion integrally formed with said optical pickup, said rack portion engaging said first gear to move, an engagement between said rack portion and said first gear being released when said rack portion reaches a
30 predetermined engagement-releasing area;

a slide rack relatively movable with respect to said rack portion, said slide rack engaging said first gear to move;

a slider member having an engaging portion capable

of engaging said second gear and a cam portion that causes said traverse chassis to swing between said holding position and said retracting position; and

a trigger member that moves in conjunction with said
5 slide rack in a state where said engagement between said rack portion and said first gear is released, so as to move said slider member to a position in which said slider member engages said second gear,

wherein said first gear and said second gear have
10 the same number of teeth, and the rotation is transmitted from said first gear to said second gear so that the ratio of the number of rotations of said first gear to the number of rotations of said second gear is 1:1.

15 2. The optical disk device according to claim 1, wherein said first gear includes a driving gear portion capable of engaging said rack portion of said optical pickup and said slide rack, and a transmission gear portion whose number of teeth is the same as said driving
20 gear portion and whose module is greater than said driving gear portion; and

Wherein said second gear has the same number of teeth as said transmission gear portion of said first gear, and the rotation is transmitted from said
25 transmission gear portion to said second gear so that the ratio of the number of rotations of said transmission gear portion to the number of rotations of said second gear is 1:1.

30 3. The optical disk device according to claim 1, wherein said second gear includes a smaller gear portion capable of engaging said engaging portion of said slider member, and a larger gear portion whose number of teeth is the same as said smaller gear portion and whose module is

greater than said smaller gear portion; and

wherein said rack portion mounted on said disk tray engages said larger gear portion of said second gear.

5 4. The optical disk device according to claim 3, wherein said disk tray has an engaging groove that engages a projection formed on said slider member, and

wherein, when said slider member moves in one direction in a state where said engaging portion of said
10 slider member engages said smaller gear portion of said second gear, said disk tray moves because of the engagement between said projection and said engaging groove, so that said rack portion of said disk tray engages said larger gear portion of said second gear.

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5. The optical disk device according to claim 2, wherein said first gear includes a larger gear portion in addition to said driving gear portion and said transmission gear portion, said larger gear portion having
20 a pitch circle larger than any of pitch circles of said driving gear portion and said transmission gear portion,

wherein said larger gear portion is composed of a spur gear, and

wherein a worm gear is fixed to an output shaft of
25 said motor, said worm gear engaging said larger gear portion, and a rotation axis of said worm gear is inclined with respect to a rotation axis of said larger gear portion at an angle corresponding to a lead angle of said worm gear.

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6. An optical disk device comprising:

an optical pickup that performs recording or reproducing of a signal on an optical disk;

a pickup driving mechanism including a rack portion

integrally formed with said optical pickup, said pickup driving mechanism causes said optical pickup to move between an outer peripheral position and an inner peripheral position of said optical disk;

5 a motor for driving said pickup driving mechanism;
 a worm gear fixed to an output shaft of said motor;
and

 a gear having a smaller gear portion that engages
said rack portion, and a larger gear portion coaxial with
10 said smaller gear portion and engaging said worm gear,

 wherein said larger gear portion is composed of a
spur gear, and a rotation axis of said worm gear is
inclined with respect to a rotation axis of said larger
gear portion at an angle corresponding to a lead angle of
15 said worm gear.